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09/900,773	07/06/2001	Steven Michael Bellovin	12177/60501	7692

7590 02/28/2007  
KENYON & KENYON  
One Broadway  
New York, NY 10004

EXAMINER
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PEREZ, ANGELICA

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 09/900,773	Applicant(s) BELLOVIN, STEVEN MICHAEL	
	Examiner Angelica M. Perez	Art Unit 2618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see amendment, filed 11/17/2006, with respect to the rejection(s) of claim(s) 1-28 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Smith.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9, 17, 19, 21 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Tayloe et al. (Tayloe, US Patent No.: 6,192,240 B1) in view of Smith (Smith et al.; US patent no.: 6,721,572 B1).

Regarding claims 1, 21 and 25, Tayloe teaches of a method for processing a, call, communication interruption, telephone call interruption and a telecommunication system (column 2, lines 22-38), between at least two communication devices (figure 2, column 1, lines 5-9; where it is inherent in the art for cellular telephone communications to operate between, at least, two communication devices) comprising the steps and means of: based on the consulting, predicting, during an established communication between the communication devices, that a connection to one of the communication

Art Unit: 2618

devices will be interrupted (column 3, lines 22-28; e.g., "until an outage is predicted"; where an outage causes communication interruptions), and announcing, before the connection is interrupted, that the connection to the one communication device will be interrupted (column 3, lines 22-28; where at least one of the callers involved in the communication is notified "that an outage is imminent", before the call is terminated).

Taylor does not specifically teach of consulting data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress; and where a prediction point is separated from an interruption point by a first predetermined time or distance interval, and a second predetermined time or distance interval between the interruption point and a connectivity point defines a no-coverage zone, the communication being capable of being re-established at or beyond the connectivity point outside the no-coverage zone.

In related art concerning a mobile communication optimization near wireless dead zone regions, Smith teaches of consulting data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress (column 1, lines 28-40, column 3, lines 37-63); and where a prediction point is separated from an interruption point by a first predetermined time or distance interval (column 1, lines 28-40; column 11, lines 9-23. See also, column 2, lines 26-37; column 3, lines 1-20, 38-57), and a second predetermined time or distance interval between the interruption point and a connectivity point defines a no-coverage zone (column 6, lines 42-54), the

Art Unit: 2618

communication being capable of being re-established at or beyond the connectivity point outside the no-coverage zone (column 10, lines 29-36).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's method for processing a communication interruption with Smith's distance/time before interruption occurs in order to make better usage of resources, as taught by Smith.

Regarding claim 2, Tayloe and Smith teach all the limitations according to claim 1. Tayloe further teaches where at least one of the communication devices is selected from a group consisting of a wireless telephone, a cellular telephone, a landline telephone, a PDA (personal digital assistant), a computer and a mobile communication device (column 2, lines 64-67; where the examiner selected "cellular telephone" from the choices provided by the applicant).

Regarding claim 3, Tayloe and Smith teach all the limitations according to claim 1.

Smith further teaches where a prediction point indicates one of a tunnel blocking the communication, a hill obstructing the communication, an indoor feature obstructing the communication, an outdoor feature obstructing the communication (columns 1, lines 28-40).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Smith's "dead zones" in order to have well defined prediction points, as taught by Smith.

Art Unit: 2618

Regarding claim 4, Tayloe and Smith teach all the limitations according to claim

1. Tayloe further teaches where a prediction point is derived from one of historical data, geographical data, enhanced location data, topographical data and GPS (Global Positioning System) (column 3, lines 43-49).

Regarding claim 5, Tayloe and Smith teach all the limitations according to claim

4.

Smith further teaches where the historical data is collected from at least one subscriber using the communication device along a path and analyzing the communication patterns, including interruptions, along the path (column 2, lines 6-34).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Smith's analyzing of the collected data in order to "anticipate connection problems", as taught by Smith.

Regarding claim 6, Tayloe and Smith teach all the limitations according to claim

4.

Smith further teaches where the geographical data is collected by mapping areas along a path for obstructions that create communication interruptions (column 2, lines 26-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Smith's collection of data by mapping the areas of traveled paths in order to have well defined prediction points, as taught by Smith.

Art Unit: 2618

Regarding claim 7, Tayloe and Smith teach all the limitations according to claim 4.

Smith further teaches where the enhanced location data is collected by observing communication flow patterns and analyzing them for any communication interruptions (column 2, lines 7-20, 26-37; columns 6-7, lines 65-67 and 1-20, respectively).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Smith's analyzing of the collected data in order to "anticipate connection problems", as taught by Smith.

Regarding claim 8, Tayloe and Smith teach all the limitations according to claim 4.

Smith further teaches where the topographical data is collected by mapping areas along a path for terrain that creates communication interruptions (column 3, lines 1-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Smith's creation of topographical data in order to "anticipate connection problems", as taught by Smith.

Regarding claim 9, Tayloe and Smith teach all the limitations according to claim 4.

Art Unit: 2618

Smith further teaches where Global Positioning System (GPS) is used to observe the communication patterns and communication obstructions features and combines both to display communication interruption (column 3, lines 1-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Smith's comparison of data in order to "anticipate connection problems", as taught by Smith.

Regarding claim 17, Tayloe and Smith teach all the limitations according to claim 1. Tayloe further teaches where least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area (figure 1 and column 2, lines 22-38), the method further comprising the step of: calculating the duration of the interruption prior to the announcement (column 4, lines 3-5; e.g., "the time remaining...before the call is dropped").

Regarding claim 19, Tayloe and Smith teach all the limitations according to claim 1. Tayloe further teaches where the reason for interruption is selected from a group consisting of the communication device has traveled outside a coverage area, due to an indoor obstruction and due to an outdoor obstruction (column 7, lines 56-64 and column 1, lines 28-37).

Regarding claim 26, Tayloe teaches of a method comprising (column 1, lines 5-9): predicting a communication drop-off for two communication devices in communication (column 3, lines 22-28; e.g., "until an outage is predicted"; where an



Art Unit: 2618

outage causes communication interruptions; column 3, lines 44-51), calculating a communication drop-off point (column 3, lines 44-51; where the drop-off point is calculated according to the "current position on earth, the relative position of the satellite cells and their size, shape and location..."); and before the drop-off point is reached, notifying a user of at least one of the communication devices of the drop-off (column 4, lines 1-15).

Tayloe does not specifically teach of data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress; and where a prediction point is separated from an interruption point by a first predetermined time or distance interval, and a second predetermined time or distance interval between the interruption point and a connectivity point defines a no-coverage zone, the communication being capable of being re-established at or beyond the connectivity point outside the no-coverage zone.

Smith teaches of data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress; and (column 1, lines 28-40, column 3, lines 37-63); and where a prediction point is separated from an interruption point by a first predetermined time or distance interval (column 1, lines 28-40; column 11, lines 9-23. See also, column 2, lines 26-37; column 3, lines 1-20, 38-57), and a second predetermined time or distance interval between the interruption point and a connectivity point defines a no-coverage zone (column 6, lines 42-54), the communication being capable of being re-established at or beyond the connectivity point outside the no-coverage zone (column 10, lines 29-36).

Art Unit: 2618

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's method for processing a communication interruption with Smith's consulting of data regarding position, distance/time before interruption occurs in order to make better usage of resources, as taught by Smith.

Regarding claim 27, Tayloe and Smith teach all the limitations according to claim 26. Tayloe further teaches comprising notifying the user of a time interval until the drop-off (column 4, lines 3-5).

Regarding claim 28. Tayloe teaches of an intelligent electronic device comprising logic to predict, a communication drop-off for two communication devices in communication (column 3, lines 22-28; e.g., "until an outage is predicted"; where an outage causes communication interruptions; column 3, lines 44-51), calculate a communication drop-off point (column 3, lines 44-51; where the drop-off point is calculated according to the "current position on earth, the relative position of the satellite cells and their size, shape and location..."); and before the drop-off point is reached, notify a user of at least one of the communication devices of the drop-off (column 3, lines 23-29).

Tayloe does not specifically teach of data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress; and where a prediction point is separated from an interruption point by a first predetermined time or distance interval, and a second predetermined time or distance interval between the interruption point and a

Art Unit: 2618

connectivity point defines a no-coverage zone, the communication being capable of being re-established at or beyond the connectivity point outside the no-coverage zone.

Smith teaches of data comprising a plurality of predetermined prediction points indicating a fixed structure capable of presenting an interference to the communication in progress; and (column 1, lines 28-40, column 3, lines 37-63); and where a prediction point is separated from an interruption point by a first predetermined time or distance interval (column 1, lines 28-40; column 11, lines 9-23. See also, column 2, lines 26-37; column 3, lines 1-20, 38-57), and a second predetermined time or distance interval between the interruption point and a connectivity point defines a no-coverage zone (column 6, lines 42-54), the communication being capable of being re-established at or beyond the connectivity point outside the no-coverage zone (column 10, lines 29-36).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's method for processing a communication interruption with Smith's consulting of data regarding position, distance/time before interruption occurs in order to make better usage of resources, as taught by Smith.

4. Claims 10-16 and 18, 20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tayloe in view of Smith as applied to claims 1, 12 and 15 above, and further in view of Amin (Amin et al, US Patent No.: 5,995,830 A).

Regarding claim 10, Tayloe and Smith teach all the limitations according to claim 1.

Tayloe and Smith do not specifically teach where the announcement also contains at least one reason for the communication interruption between the devices.

Art Unit: 2618

In related art, concerning a system and method for processing dropped calls, Amin teaches where the announcement also contains at least one reason for the communication interruption between the devices (column 2, lines 8-12; e.g., "may include the reasons that the connection was dropped").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Amin's message including the reasons why the connection was dropped in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 11, Tayloe and Smith teach all the limitations according to claim 1.

Tayloe and Smith do not specifically teach the step of sending a message to the other communication device indicating the reason that the connection to the one communication device has been interrupted.

Amin teaches the step of sending a message to the other communication device indicating the reason that the connection to the one communication device has been interrupted (column 2, lines 8-12; e.g., "may include the reasons that the connection was dropped").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Amin's message including the reasons why the

Art Unit: 2618

connection was dropped in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claims 12 and 22, Tayloe and Smith teach all the limitations according to claims 1 and 21, respectively.

Tayloe and Smith do not specifically teach the step of reconnecting to the one communication device and re-establishing the communication.

In related art, concerning a system and method for processing dropped calls, Amin teaches the step of reconnecting to the one communication device and re-establishing the communication (column 2, lines 16-20).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Amin's reconnecting and re-establishing the communication in order to maintain communication between the users, as taught by Amin.

Regarding claim 13, Tayloe, Smith and Amin teach all the limitations according to claim 12.

Amin further teaches the step of sending at least one reconnection indication to the other communication device upon a successful reconnection to the one communication device (column 2 lines 20-23).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a

Art Unit: 2618

communication interruption with Amin's indication to the other device in order to maintain communication between the users, as taught by Amin.

Regarding claims 14 and 23, Tayloe and Smith teach all the limitations according to claims 1 and 21, respectively.

Tayloe and Smith do not specifically teach the step of making at least one attempt to re-establish communication between the two communication devices.

Amin teaches the step of making at least one attempt to re-establish communication between the two communication devices (column 2, lines 13-18).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Amin's attempt to re-establish communication in order to maintain communication between the users, as taught by Amin.

Regarding claim 15, Tayloe and Smith teach all the limitations according to claim 1.

Tayloe and Smith do not specifically teach the step of attempting to reconnect to the one communication device, and if the reconnection fails, connecting the other communication device to another medium.

Amin teaches the step of attempting to reconnect to the one communication device, and if the reconnection fails, connecting the other communication device to another medium (column 2, lines 24-31; e.g., "voice mail").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a

Art Unit: 2618

communication interruption with Amin's connecting the other communication device to another medium in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 16, Tayoe, Smith and Amin teach all the limitations according to claim 15.

Amin further teaches where the another medium is selected from a group consisting of voice mail, a memory location, audio, data and video (column 2, lines 24-31; where the examiner selected "voice mail" from the choices provided by the applicant).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Amin's voice mail medium in order to maintain communication in a different manner.

Regarding claim 18, Tayloe and Smith teach all the limitations according to claim 1.

Tayoe and Smith do not specifically teach where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area, the method further comprising the step of: determining the reasons for the connection interruption.

In related art, concerning a system and method for processing dropped calls, Amin teaches where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a

Art Unit: 2618

coverage area, the method further comprising the step of: determining the reasons for the connection interruption (column 2, lines 8-12; e.g., "the reasons that the connection was dropped").

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayoe's and Smith's method for processing a communication interruption with Amin's determination of the reasons why the connection was dropped in order to inform the users about them; thus, "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 20, Tayloe and Smith teach all the limitations according to claim 1.

Tayloe and Smith do not specifically teach where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area, the method further comprising the step of connecting the other communication device to voice mail without attempting to reconnect to the wireless communication device.

Amin teaches where at least one communication device is a wireless communication device operating in conjunction with a wireless communication network having a coverage area, the method further comprising the step of: connecting the other communication device to voice mail without attempting to reconnect to the wireless communication device (column 2, lines 32-42 and column 5, lines 47-50).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a



Art Unit: 2618

communication interruption with Amin's connecting the other communication device to voice mail without attempting to reconnect in order to "increase the chances that the communication between the users can continue", as taught by Amin.

Regarding claim 24, Tayloe and Smith teach all the limitations according to claim 21.

Tayloe and Smith do not specifically teach the step of dialing a telephone number of the one communication device.

Amin teaches the step of dialing a telephone number of the one communication device (column 3, lines 36-46).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Tayloe's and Smith's method for processing a communication interruption with Amin's step of dialing a telephone number in order to inform the user of a possible disconnection so that, the user can take measures that may "increase the chances that the communication between the users can continue", as taught by Amin.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2618

**Conclusion**

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Angelica Perez whose telephone number is 571-272-7885. The examiner can normally be reached on 7:00 a.m. - 3:30 p.m., Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either the PAIR or Public PAIR. Status information for unpublished applications is available through the Private PAIR only. For more information about the pair system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Information regarding Patent Application Information Retrieval (PAIR) system can be found at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.

Application/Control Number: 09/900,773

Page 18

Art Unit: 2618

*Lana N. Le*  
2-02-07

LANA LE  
PRIMARY EXAMINER

*Angelica Perez*  
Angelica Perez  
(Examiner)

February 2, 2007

Art Unit 2618